

**REMARKS**

The Official Action mailed March 28, 2002 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Two Month Extension of Time*, which extends the shortened statutory period for response to August 28, 2002. Accordingly, Applicant respectfully submits that this response is being timely filed.

Applicants note with appreciation the consideration of the Information Disclosure Statement filed on July 19, 2000.

Claims 1-22 were pending in the present application. Claims 1, 4, 8, 10, 12, 15, 19 and 21 have been amended and new claims 23-28 have been added to recite additional protection to which the Applicants are entitled. Claims 1-28 are now pending in the present application, of which claims 1, 4, 8, 10, 12, 15, 19, 21 and 23-28 are independent. For the reasons set forth in detail below, these claims are believed to be in condition for allowance.

Paragraph 1 of the Official Action objects to claim 15 due to minor informalities. In response, Applicants have amended claim 15 to correct such informalities as required. Reconsideration is requested. Also, claims 1, 4, 8, 12, 15 and 19 have been amended to correct minor matters of form. These amendments are merely clarifying in nature, and should not in any way affect the scope of protection afforded the claims for infringement purposes, particularly, under the Doctrine of Equivalents.

Paragraph 2 of the Official Action rejects claims 1, 2, 8, 10-13, 19, 21 and 22 as anticipated by U.S. Patent 5,812,109 to Kaifu et al. It is well established that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

With respect to independent claims 1, 8, 12 and 19, on page 2 of the Office Action, it is asserted that a pixel electrode 2 comprises a reflecting material 6 and a light-transmitting material 81. Further, on page 5 of the Office Action, it is asserted that a pixel electrode comprises a reflecting material 6 and a light-transmitting material 5. The Applicants respectfully disagree.

As noted in MPEP 2111.03, "comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added

and still form a construct within the scope of the claim. In this regard, "comprises" is similar to "includes." It is unclear to the Applicants how the electrode (or G electrode) 2 of Kaifu can be interpreted to comprise (include) the separately identified and referenced orientation layer 81, injection prevention layer 5, and upper or D electrode 6. Furthermore, orientation layer 81, injection prevention layer 5, and electrode 6 are not pixel electrodes or parts of a pixel electrode. Kaifu does not teach or suggest all the elements of the independent claims, either explicitly or inherently, and therefore cannot anticipate the pending claims.

With respect to independent claims 10 and 21, the Applicants have amended the claims herewith and reconsideration is respectfully requested. Kaifu does not teach or suggest all the elements of amended independent claims 10 and 21, either explicitly or inherently.

Accordingly, reconsideration and withdrawal of the rejection of independent claims 1, 8, 10, 12, 19 and 21 under 35 U.S.C. § 102(b) is in order and respectfully requested. Likewise, it is believed that dependent claims 2, 11, 13 and 22 are likewise allowable in that they depend from what is believed to be allowable base claims 1, 8, 10, 12, 19 and 21.


Paragraph 3 of the Official Action rejects claims 3-7, 9, 14-18 and 20 as obvious based on the combination of Kaifu and U.S. Patent 5,585,817 to Itoh et al. As stated in MPEP § 2143-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837

F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

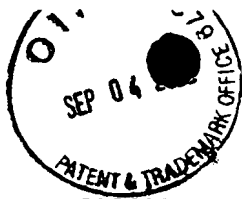
It is respectfully submitted that Itoh does nothing to overcome the deficiencies in Kaifu noted above and thus that the Official Action has failed to establish a *prima facie* case of obviousness. On page 9 of the Office Action, it is asserted that a pixel electrode 2 comprises a reflecting material 6 and a light-transmitting material 81. Further, on page 11 of the Office Action, it is asserted that a pixel electrode comprises a reflecting material 6 and a light-transmitting material 5. Again, the Applicants respectfully disagree. As explained above, the electrode (or G electrode) 2 of Kaifu does not comprise the separately identified and referenced orientation layer 81, injection prevention layer 5, and upper or D electrode 6. Further, orientation layer 81, injection prevention layer 5, and electrode 6 are not pixel electrodes or parts of a pixel electrode. Kaifu and Itoh, whether taken alone or in combination, do not teach or suggest all the elements of the independent claims. Accordingly, reconsideration and withdrawal of the rejection of independent claims 4 and 15 under 35 U.S.C. § 103(a) is in order and respectfully requested. Likewise, it is believed that dependent claims 5-7 and 16-18 are likewise allowable in that they depend from what is believed to be allowable base claims 4 and 15.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

  
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Application Serial No. 09/619,479

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please amend claims 1, 4, 8, 10, 12, 15, 19 and 21 as follows:

1. [An integral image recognition/display apparatus] A display device  
comprising:
  - a plurality of pixel portions each having an active device and arranged in matrix and each having a pixel electrode comprising a reflecting material and a light-transmitting material over [an active matrix] a substrate; and
  - a plurality of sensor portions arranged in matrix over said [active matrix] substrate,
  - wherein each of said sensor [portion] portions includes a photo-electric conversion device, and can read information by utilizing the rays of light transmitting through said light-transmitting material when an external image is read.
4. [An integral image recognition/display apparatus] A display device  
comprising:
  - a plurality of pixel portions each having an active device and arranged in matrix and each having a pixel electrode comprising a reflecting material and a light-transmitting material over [an active matrix] a first substrate; and
  - a plurality of sensor portions disposed in matrix over [an opposed] a second substrate [constituting a display panel] opposed to said first substrate,
  - wherein each of said sensor [portion] portions has a photo-electric conversion device, and can read information by utilizing the rays of light transmitting through said light-transmitting material when an external image is read.
8. [An integral image recognition/display apparatus] A display device  
comprising:
  - a plurality of pixel portions each having an active device and arranged in matrix and each having a pixel electrode comprising a reflecting material and a light-transmitting material over [an active matrix] a substrate; and

a plurality of sensor portions arranged in matrix over said [active matrix] substrate, wherein each of said sensor [portion] portions has a photo-electric conversion device, and at least a part of said photo-electric conversion device is extended in such a manner as to overlap with said active device.

10. [An integral image recognition/display apparatus] A display device comprising:

a plurality of pixel portions each [having an active device] comprising a transistor and arranged in matrix over [an active matrix] a substrate; [and]

a plurality of sensor portions arranged in matrix over said [active matrix] substrate and comprising an upper electrode and a lower electrode and a photoelectric conversion layer provided between said upper electrode and said lower electrode;

an insulation film provided over said upper electrode; and

a pixel electrode provided over said insulation film and connected with one of a source region and a drain region of said transistor;

wherein [a pixel capacitance portion provided to each of said pixel portions functions also as a capacitance portion for image recognition, disposed in corresponding one of said sensor portions] said pixel electrode overlaps with said upper electrode with said insulation film therebetween to provide a capacitance.

12. A semiconductor device comprising:

a pixel portion having an active device and a pixel electrode comprising a reflecting material and a light-transmitting material over [an active matrix] a substrate; and  
a sensor portion provided over said [active matrix] substrate and comprising a photo-electric conversion device,

wherein said active [device and] device, said pixel electrode and said photo-electric conversion device are provided in one of pixels arranged in matrix, and

wherein said sensor portion can read information by utilizing the rays of light transmitting through said light-transmitting material when an external image is read.

15. A semiconductor device comprising:

[an active matrix] a first substrate and [an opposed] a second substrate opposed to said first substrate;

a pixel portion having an active device and a pixel electrode comprising a reflecting material and a light-transmitting material over said [active matrix] first substrate; and

a sensor portion provided over said [opposed] second substrate and comprising a photo-electric conversion device,

[wherein said active device and said pixel electrode and said photo-electric conversion device are provided in one of pixels arranged in matrix,]

wherein said active [device and] device, said pixel electrode and said photo-electric conversion device are provided in one of pixels arranged in matrix, and

wherein said sensor portion can read information by utilizing the rays of light transmitting through said light-transmitting material when an external image is read.

19. A semiconductor device comprising:

a pixel portion having an active device and a pixel electrode comprising a reflecting material and a light-transmitting material over [an active matrix] a substrate; and

a sensor portion provided over said [active matrix] substrate and having a photo-electric conversion device,

wherein said active [device and] device, said pixel electrode and said photo-electric conversion device are provided in one of pixels arranged in matrix, and

wherein at least a part of said photo-electric conversion device is extended in such a manner as to overlap with said active device.

21. A semiconductor device comprising:

a pixel portion [having an active device] comprising a transistor provided over [an active matrix] a substrate; and

a sensor portion provided over said [active matrix] substrate and comprising an upper electrode and a lower electrode and a photoelectric conversion layer provided between said upper electrode and said lower electrode;

an insulation film provided over said upper electrode; and

a pixel electrode provided over said insulation film and connected with one of a source region and a drain region of said transistor;

wherein [a pixel capacitance portion provided to said pixel portion functions also as a capacitance portion for image recognition, disposed in said sensor portion] said pixel electrode overlaps with said upper electrode with said insulation film therebetween to provide a capacitance.